SUPPLEMENTAL MATERIAL

Data S1.

DATA SOURCES

Cardiac Device Data

Implanted cardiac devices, such as pacemakers and ICDs, have built-in arrhythmia detection algorithms that identify and classify arrhythmic events based on sensor data from rate and rate derived measurements (based on cycle-by-cycle interval measurements) include average/median cycle length, rapid deviation in cycle length (onset), minimal deviation of cycle length (stability). A third algorithm, morphology discrimination, has been implemented in the detection process in order to withhold VT therapy delivery on sinus tachycardia and supraventricular rhythms.

All ICDs and pacemakers in this analysis were capable of continuously recording daily rhythm data for up to one year. Data include information on device function, arrhythmia episodes (type, date and time of occurrence, duration, number of events) and therapy administered [ICD shocks and anti-tachycardia pacing, ATP)]. Remote home monitors automatically transmit these data to healthcare clinics at regularly scheduled intervals for clinical use and the report from each transmission is uploaded into patient's EHR. Cardiac device data from remote transmissions and in-office device interrogations during the hazard and control periods were included in the analysis.

a) *Atrial arrhythmias* were measured by the device and episodes meeting established criteria for duration (e.g., AF $\geq$ 30 seconds) were included in analysis without further adjudication. Since event counts would have been measured consistently in both the hazard and control periods, thus it is unlikely to have affected risk estimates. Device detection algorithms for atrial arrythmias have been well-validated and have demonstrated a positive predictive value >93% for true atrial tachycardia/fibrillation events in prior studies.[35]

b) *ICD shocks* were considered to be appropriate if the triggering rhythm was determined to be ventricular fibrillation or ventricular tachycardia according to standard definitions.[30] Inappropriate ICD shocks due to supraventricular tachycardias, oversensing or spontaneous termination of non-sustained ventricular tachycardia were excluded from analysis.

Electronic Health Record Data

Baseline demographic characteristics and clinical information were obtained from the Carolina Data Warehouse (CDW) which stores EHR databases for all University of North Carolina (UNC) facilities and affiliated hospitals. The CDW uses a standardized HIPAA–compliant data dictionary which is harmonized with discrete data from electronic health records through validated automated computer algorithms and standard methodology.[22] Harmonized databases include patients' demographic details, insurance status, and clinical information from all inpatient and outpatient visits to UNC and affiliated facilities.

a) *Clinical diagnoses* were considered present if the *International Classification of Diseases, 10th Revision, Clinical Modification* code for that condition was identified in a patient's EHR records, otherwise comorbidities were considered not present. Current

and historic diagnoses included in this analysis were hypertension, previous myocardial infarction, congestive heart failure, coronary artery disease, diabetes mellitus, obstructive sleep apnea, stroke/transient ischemic attack, lipid disorders, peripheral vascular disease, valvular heart disease, chronic kidney disease, obstructive pulmonary disease (COPD), and atrial fibrillation/atrial flutter.

b) *Co-existing psychiatric disorders.* A composite variable was created for any prior diagnoses of anxiety and depressive disorders: generalized anxiety disorder, post-traumatic stress disorder, panic disorder, major depressive disorder.

c) *Health trends.* Data on body mass index, current or remote history of smoking, alcohol and substance use were obtained from the inpatient or outpatient visit nearest to June 1, 2016.

d) *Medications.* Antidepressant medications included selective serotonin reuptake inhibitors/serotonin and norepinephrine reuptake inhibitors. Cardiovascular drug therapies recorded as of June 1, 2016 included any ARBs, and ACE inhibitors, beta-blockers, statins, calcium channel blockers, anticoagulation and Aspirin/antiplatelet therapy. Data regarding device indication (primary vs. secondary prevention) were not available for this analysis.

Voter Registration Records

Voter registration records are publicly available and updated weekly by the North Carolina State Board of Elections. Current and historic voter registration files can be accessed at: https://www.ncsbe.gov/results-data/election-results. The November 8, 2016 was accessed for this study (current as of the day of the election).

DATA EXTRACTION AND LINKAGE PROCEDURES

Automated computer algorithms and standard methodology[22,37] were used to abstract demographic and clinical information from the Carolina Data Warehouse. No data were manually abstracted from the electronic medical record or charts. Device data were deterministically linked to clinical data with medical record numbers (MRNs) and device ID/serial numbers. We then linked these data to voter registration records with personal identifiers that are contained in the publicly available voter files (name, sex, address, zip code). Linked records were required to match on at least 3 identifiers to be included in the analysis.

Table S1. Incidence Ratios for Supraventricular Arrhythmias During the 2016 U.S Presidential Election.

	IRR and 95%CI	P-value
Period (control period reference group)	1.82 (1.36-2.43)	< 0.001
Age (in decades)	1.00 (0.89-1.11)	0.931
Sex (male reference group)	1.02 (0.77-1.36)	0.884
Race/Ethnicity* (white reference group)	1.51 (1.09-2.08)	0.013
Time since diagnosis (years)‡	0.83 (0.78-0.89)	<0.001
Device type (pacemaker reference group)	0.66 (0.47-0.93)	0.018
Congestive heart failure	0.83 (0.63-1.09)	0.172
Hypertension	0.60 (0.43-0.84)	0.003
Coronary artery disease	1.45 (1.03-2.03)	0.031
Chronic kidney disease	0.85 (0.51-1.42)	0.529
Diabetes Mellitus	1.04 (0.66-1.64)	0.850
AF/atrial flutter	1.83 (1.36-2.47)	< 0.001
LVAD	1.85 (0.57-5.98)	0.305
Antiarrhythmics medications	1.27 (0.92-1.74)	0.150
Beta Blocker medications	0.85 (0.57-1.27)	0.433
Prior anxiety or depressive disorder	1.04 (0.61-1.77)	0.883

Listed values may include multiple arrhythmic events within a single patient and are controlled for by the analysis. A composite variable was created for any prior diagnoses of anxiety and depressive disorders: generalized anxiety disorder, post-traumatic stress disorder, panic disorder, major depressive disorder. Since Abbott devices do not discriminate between non-sustained events (supraventricular vs. ventricular), persons with these devices were excluded from analyses of composite outcomes.

Table S2. Incidence Ratios for Ventricular Arrhythmias During the 2016 U.S Presidential Election.

	IRR and 95%CI	P-value
Period (control period reference group)	1.60 (1.22-2.10)	<0.001
Age (in decades)	0.94 (0.85-1.03)	0.194
Sex (male reference group)	0.91 (0.67-1.23)	0.527
Race/Ethnicity* (white reference group)	1.38 (1.03-1.85)	0.032
Time since diagnosis (years)‡	1.11 (1.07-1.15)	<0.001
Device type (pacemaker reference group)	2.35 (1.59-3.48)	<0.001
Congestive heart failure	0.71 (0.49-1.04)	0.077
Hypertension	0.99 (0.70-1.39)	0.932
Coronary artery disease	0.86 (0.60-1.22)	0.392
Chronic kidney disease	1.32 (0.74-2.36)	0.343
Diabetes Mellitus	0.69 (0.41-1.17)	0.171
AF/atrial flutter	1.23 (0.93-1.62)	0.143
LVAD	7.03 (2.89-17.12)	<0.001
Antiarrhythmics medications	1.15 (0.80-1.67)	0.455
Beta Blocker medications	1.13 (0.73-1.74)	0.576
Prior anxiety or depressive disorder	0.68 (0.40-1.16)	0.161

Listed values may include multiple arrhythmic events within a single patient and are controlled for by the analysis. A composite variable was created for any prior diagnoses of anxiety and depressive disorders: generalized anxiety disorder, post-traumatic stress disorder, panic disorder, major depressive disorder. Since Abbott devices do not discriminate between non-sustained events (supraventricular vs. ventricular), persons with these devices were excluded from analyses of composite outcomes.

Table S3. Characteristics of the Study Population According to Political Affiliation.

	Democrat (n =564)	Republican (n =328)	Unaffiliated (n =219)	P-value
Demographics				
Age (years)‡	73.5 ± 11.4	72.7 ± 10.3	69.9 ± 13.6	0.001
Male	302 (53.5%)	226 (68.9%)	151 (68.9%)	<0.001
Race/Ethnicity*				
White/Caucasian	350 (62.1%)	319 (97.6%)	192 (87.7%)	
Black	190 (33.7%)	2 (0.6%)	16 (7.3%)	
Hispanic	0	0	1 (0.5%)	
Other	24 (4.3%)	6 (1.8%)	10 (4.6%)	
Employment status (retired)	401 (75.4%)	231 (74.8%)	143 (69.4%)	0.242
Device				
Pacemaker (ICD as referent group)	281 (49.8%)	167 (50.9%)	105 (47.9%)	0.792
Left ventricular assist device	4 (0.7%)	0	2 (1.0%)	0.24
Time since implant (years)‡	3.28 (±3.35)	3.34 (±3.37)	2.95 (±2.64)	0.339
Clinical history				
Hypertension	325 (60.1%)	219 (69.3%)	133 (64.3%)	0.024
Previous myocardial infarction	179 (33.1%)	141 (44.6%)	86 (41.5%)	0.002
Congestive heart failure	275 (50.8%)	152 (48.1%)	98 (47.3%)	0.599
Coronary artery disease	183 (33.8%)	145 (45.9%)	90 (43.5%)	0.001
Diabetes mellitus	89 (16.5%)	61 (19.3%)	34 (16.4%)	0.534
Obstructive sleep apnea	51 (9.4%)	27 (8.5%)	17 (8.2%)	0.871
Stroke/TIA	36 (6.7%)	21 (6.6%)	14 (6.8%)	1.000
Lipid disorders	129 (23.8%)	93 (29.4%)	51 (24.6%)	0.184
Peripheral vascular disease	46 (8.5%)	31 (9.8%)	15 (7.2%)	0.609
Valvular heart disease	68 (12.6%)	32 (10.1%)	18 (8.7%)	0.273
Chronic kidney disease	45 (8.3%)	26 (8.2%)	18 (8.7%)	0.978
COPD	59 (10.9%)	33 (10.4%)	21 (10.1%)	0.973
Arrhythmias and Conduction Defects				
Atrial fibrillation/atrial flutter	250 (46.2%)	162 (51.3%)	93 (44.9%)	0.257
Prior sudden cardiac arrest	8 (1.5%)	9 (2.8%)	3 (1.4%)	0.371
Medications				
ACE-inhibitor or ARB	389 (69.0%)	211 (64.3%)	143 (65.3%)	0.310
Beta-Blocker	450 (79.8%)	265 (80.8%)	173 (79.0%)	0.874
Statin	372 (66.0%)	223 (68.0%)	150 (68.5%)	0.737
Calcium channel blockers	205 (36.3%)	89 (27.1%)	55 (25.1%)	0.001
Anti-Arrhythmic	120 (21.3%)	79 (24.1%)	46 (21.0%)	0.573
Anticoagulation	297 (52.7%)	150 (45.7%)	104 (47.5%)	0.107
Antiplatelet agent/Aspirin	415 (73.6%)	227 (69.2%)	157 (71.7%)	0.374

Antidepressant[†]	162 (28.7%)	74 (22.6%)	66 (30.1%)	0.072
Lifestyle factors				
Body mass index (BMI)[‡]	29.85 ± 6.25	29.97 ± 6.94	29.57 ± 6.24	0.790
Alcohol abuse	1 (0.2%)	1 (0.3%)	2 (1.0%)	0.320
Drug abuse	3 (0.6%)	2 (0.6%)	4 (1.9%)	0.205
Smoking status				
Current	33 (5.9%)	21 (6.6%)	12 (5.8%)	
Former	239 (43.1%)	159 (50.2%)	107 (51.7%)	
Never	283 (51.0%)	137 (43.2%)	88 (42.5%)	
Psychiatric comorbidities				
Major depressive disorder	29 (5.4%)	16 (5.1%)	20 (9.7%)	0.071
Prior anxiety or depressive disorder[§]	32 (5.9%)	21 (6.6%)	21 (10.1%)	0.128

Listed values are for patients with linked voter registration data (n=1,111) from the day of the election (November 8, 2016). All demographic and clinical data were recorded in the EHR prior to the start of the study period (June 1, 2016). ICD = implantable cardioverter defibrillator; TIA = transient ischemic attack; COPD = chronic obstructive pulmonary disease; ACE = angiotensin converting enzyme; ARB = angiotensin receptor blocker.

[‡] Data are presented as mean ± standard deviation (SD).

*Data missing: race/ethnicity n=7 (0.3%).

[†]Antidepressant medications include selective serotonin reuptake inhibitors/serotonin and norepinephrine reuptake inhibitors.

[§]A composite variable was created for any prior diagnoses of anxiety and depressive disorders: generalized anxiety disorder, post-traumatic stress disorder, panic disorder, major depressive disorder.

Table S4. Sensitivity Analyses with Binary Arrhythmia Outcomes: Relative Risk of Arrhythmias During the Hazard Period and 2016 Control Period.

	Total number of events		RR (95% CI)	P-value
	Hazard Period	Control Period		
All arrhythmias	655	472	1.39 (1.22-1.57)	<0.001
Supraventricular arrhythmia	273	188	1.45 (1.18-1.79)	<0.001
Ventricular arrhythmia	465	335	1.39 (1.19-1.62)	<0.001

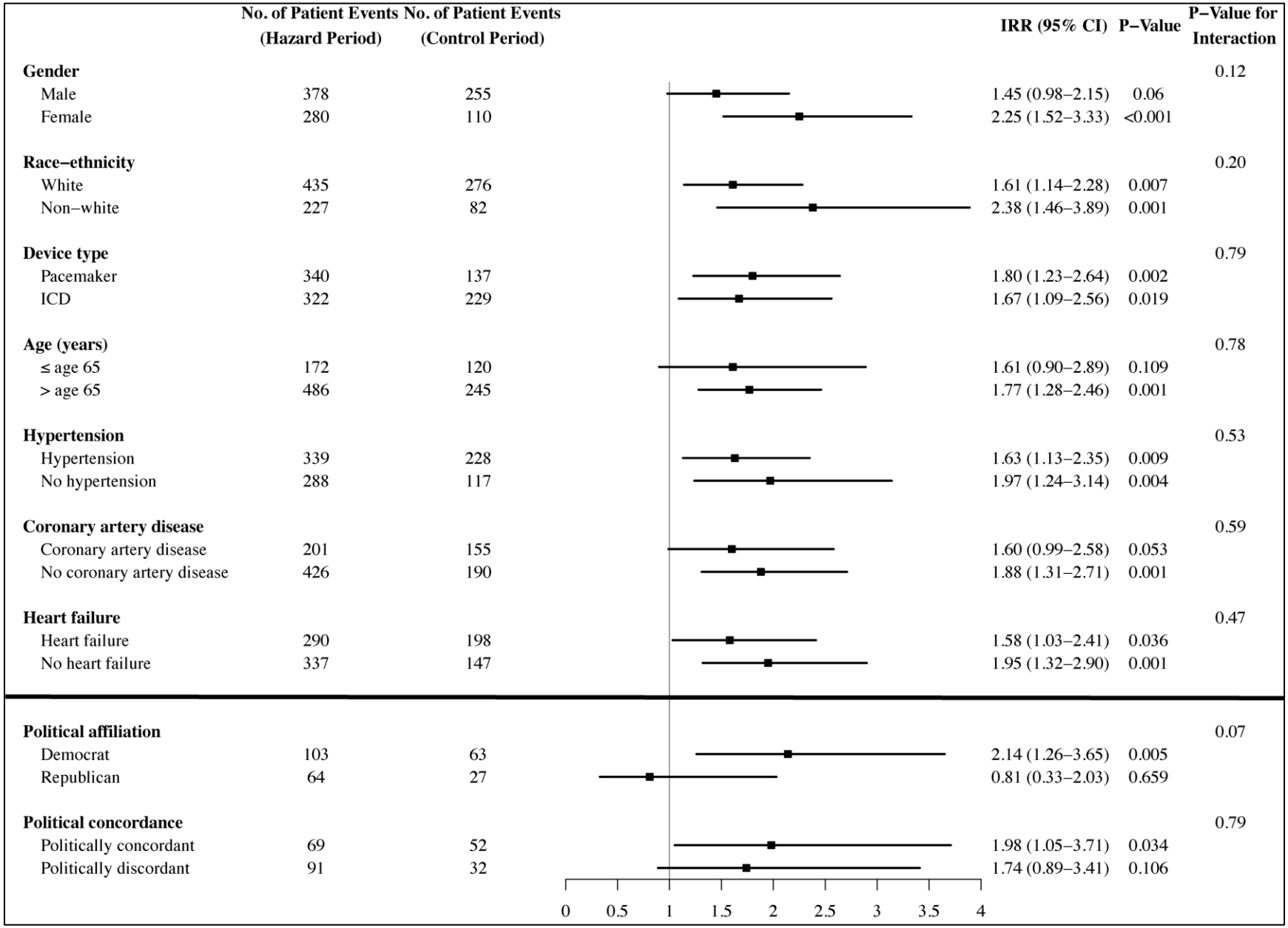
To assess the robustness of the primary findings, we modeled the risk of arrhythmia as a binary (instead of a continuous) outcome using the Mantel-Haenszel method to determine the relative risk (RR) of arrhythmias during the hazard period compared to the control period. Estimates were not adjusted for baseline variables. Definition of composite outcomes: supraventricular arrhythmias (AF and SVT), ventricular arrhythmias (NSVT and VT/VF), and device therapy administered (ATP and ICD shocks). Since Abbott devices do not discriminate between non-sustained events (supraventricular vs. ventricular), persons with these devices were excluded from analyses of composite outcomes.

Table S5. Sensitivity Analyses with Binary Arrhythmia Outcomes: Relative Risk of Arrhythmias During the Hazard Period and 2015 Control Period.

	Total number of events		RR (95% CI)	P-value
	Hazard Period	Control Period		
All arrhythmias	175	136	1.29 (1.04-1.59)	0.019
Supraventricular arrhythmia	45	26	1.73 (1.03-2.89)	0.036
Ventricular arrhythmia	148	123	1.20 (0.95-1.53)	0.127

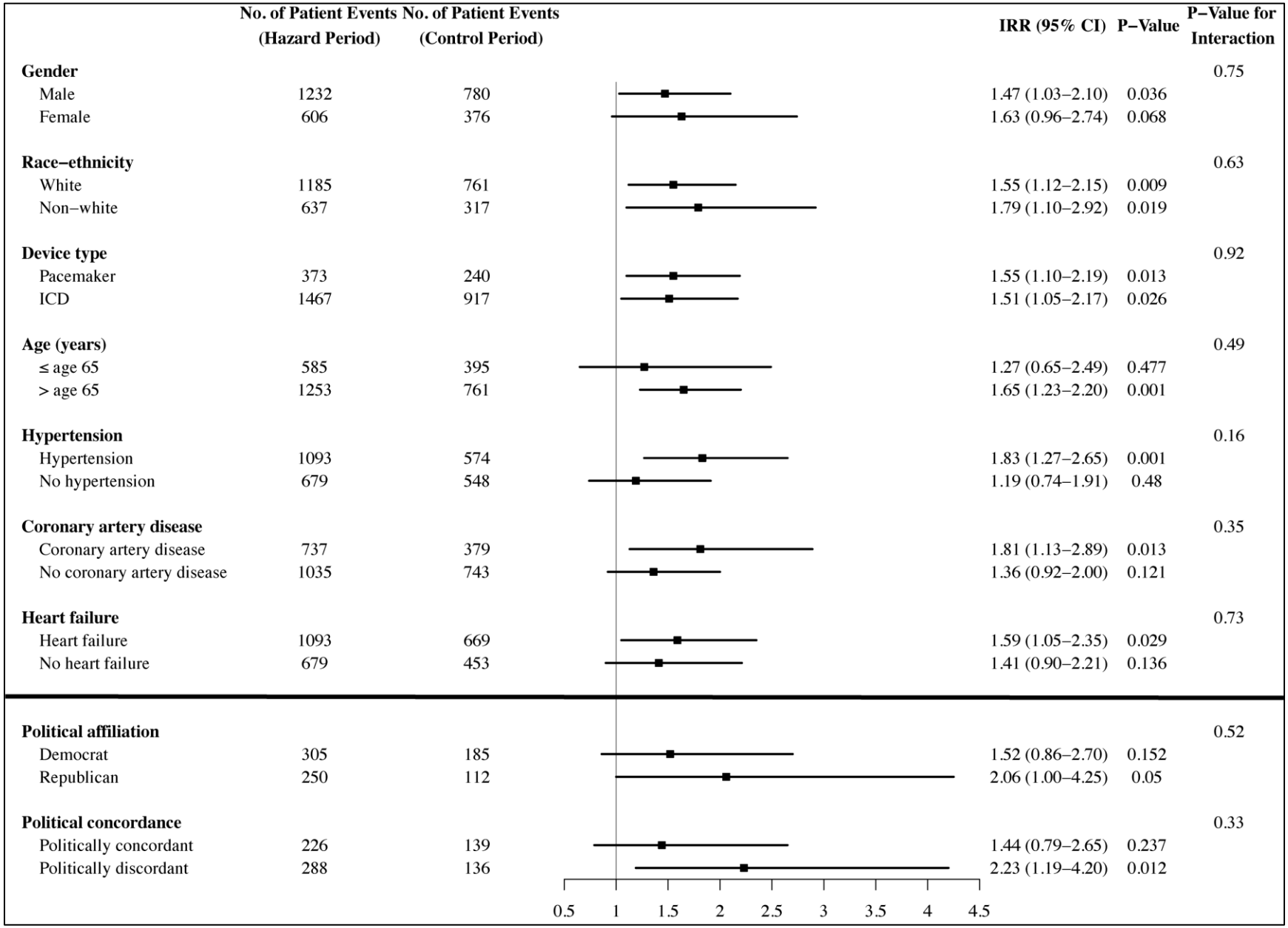
To ensure that results were not attributable to differences in temperature and season, we performed a sensitivity analysis in a subgroup of patients with Boston Scientific devices (n = 460) who had complete device data during the hazard period (October 25, 2016 to December 6, 2016) and the same time-period one year prior to the presidential election (October 25, 2015 to December 6, 2015). Continuous device data one year prior to the election were not available for Medtronic or Abbott devices. Relative risk (RR) estimates were not adjusted for baseline variables. Definition of composite outcomes: supraventricular arrhythmias (AF and SVT) and ventricular arrhythmias (NSVT and VT/VF).

Figure S1. Subgroup Analyses for Supraventricular Arrhythmias During the 2016 Presidential Election.



Subgroup analyses for gender, race/ethnicity, device type, age, hypertension, coronary artery disease and congestive heart failure were performed with data from the entire cohort (n=2,436). Subgroup analyses for political affiliation and political concordance were limited to persons with matched voter registration data (n=1,111). Listed values may include multiple arrhythmic events within a single patient and are controlled for by the analysis. Incidence ratios were not adjusted for baseline variables. Composite outcomes include: supraventricular arrhythmias (AF and SVT) and ventricular arrhythmias (NSVT and VT/VF). Since Abbott devices do not discriminate between non-sustained events (supraventricular vs. ventricular), persons with these devices were excluded from analyses of composite outcomes.

Figure S2. Subgroup Analyses for Ventricular Arrhythmias During the 2016 Presidential Election.



Subgroup analyses for gender, race/ethnicity, device type, age, hypertension, coronary artery disease and congestive heart failure were performed with data from the entire cohort (n=2,436). Subgroup analyses for political affiliation and political concordance were limited to persons with matched voter registration data (n=1,111). Listed values may include multiple arrhythmic events within a single patient and are controlled for by the analysis. Incidence ratios were not adjusted for baseline variables. Composite outcomes include: supraventricular arrhythmias (AF and SVT) and ventricular arrhythmias (NSVT and VT/VF). Since Abbott devices do not discriminate between non-sustained events (supraventricular vs. ventricular), persons with these devices were excluded from analyses of composite outcomes.

Figure S3. Sensitivity Analysis for AF Burden During the 2016 U.S Presidential Election Compared to the Same Time-Period One Year Earlier.